Refining Implementation of UMAM rule 62-345

Audubon Presentation

Governing Board Meeting

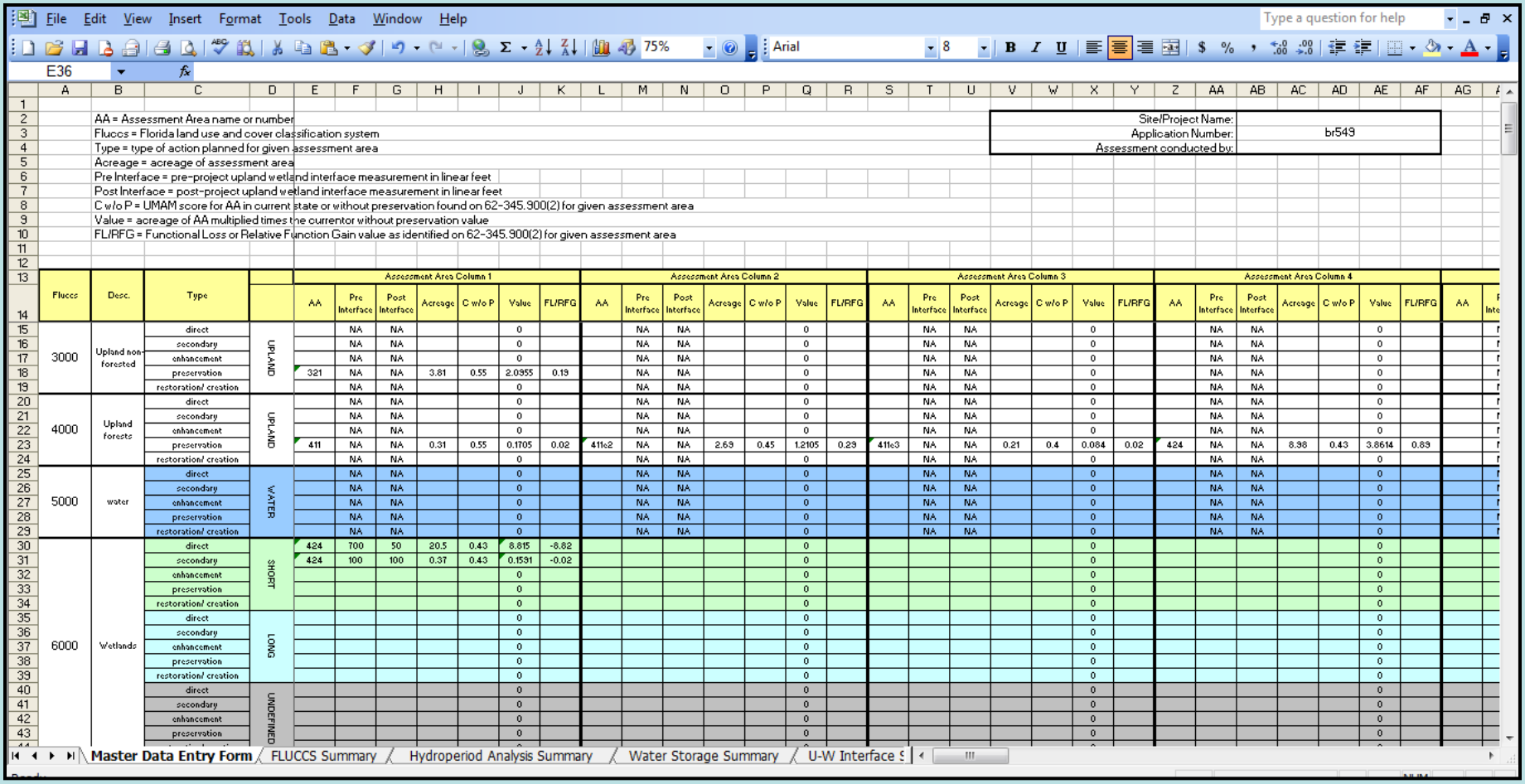
9-8-2010

Review of UMAM - Findings

- The Rule..
  - General addressing of all wetland functions
  - Specific mechanisms for measuring some functions
  - Some functions left to best professional judgment & staff discretion
- Implementation
  - Quantification of functions not transparent
  - Do track “forested” & “herbaceous” functional groups
  - Do not consistently track other functional groups
    - Hydroperiod, “Relative rarity” (i.e. scarcity), wetland-upland interface, water storage
- Result
  - Impacts to certain functions are not accounted for and mitigation of those impacts is at times inadequate.

Tracking sheet tool

the Excel version is ready an Access version being developed



AA = Assessment Area name or number
Fluccs = Florida land use and cover classification system
Type = type of action planned for given assessment area
Acreage = acreage of assessment area
Pre Interface = pre-project upland wetland interface measurement in linear feet
Post Interface = post-project upland wetland interface measurement in linear feet
C w/o P = UMAM score for AA in current state or without preservation found on 62-345.900(2) for given assessment area
Value = acreage of AA multiplied times the currentor without preservation value
FL/RFG = Functional Loss or Relative Function Gain value as identified on 62-345.900(2) for given assessment area

Site/Project Name:
Application Number: br549
Assessment conducted by:

Fluccs	Desc.	Type		Assessment Area Column 1 AA	Pre Interface	Post Interface	Acreage	C w/o P	Value	FL/RFG	Assessment Area Column 2 AA	Pre Interface	Post Interface	Acreage	C w/o P	Value	FL/RFG	Assessment Area Column 3 AA	Pre Interface	Post Interface	Acreage	C w/o P	Value	FL/RFG	Assessment Area Column 4 AA	Pre Interface	Post Interface	Acreage	C w/o P	Value	FL/RFG
3000	Upland non-forested	direct	UPLAND		NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		secondary			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		enhancement			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		preservation		321	NA	NA	3.81	0.55	2.0955	0.13		NA	NA			0			NA	NA			0			NA	NA			0	
		restoration/ creation			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
4000	Upland forests	direct	UPLAND		NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		secondary			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		enhancement			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		preservation		411	NA	NA	0.31	0.55	0.1705	0.02	411c2	NA	NA	2.63	0.45	1.2105	0.29	411c3	NA	NA	0.21	0.4	0.084	0.02	424	NA	NA	8.38	0.43	3.8614	0.83
		restoration/ creation			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
5000	water	direct	WATER		NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		secondary			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		enhancement			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		preservation			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
		restoration/ creation			NA	NA			0			NA	NA			0			NA	NA			0			NA	NA			0	
6000	Wetlands	direct	SHORT	424	700	50	20.5	0.43	8.815	-8.82						0							0							0	
		secondary		424	100	100	0.37	0.43	0.1591	-0.02						0							0							0	
		enhancement							0							0							0							0	
		preservation							0							0							0							0	
		restoration/ creation							0							0							0							0	
		direct	LONG						0							0							0							0	
		secondary							0							0							0							0	
		enhancement							0							0							0							0	
		preservation							0							0							0							0	
		restoration/ creation							0							0							0							0	
		direct	UNDEFINED						0							0							0							0	
		secondary							0							0							0							0	
		enhancement							0							0							0							0	
		preservation							0							0							0							0	

Master Data Entry Form | FLUCCS Summary | Hydroperiod Analysis Summary | Water Storage Summary | U-W Interface S

Scarcity (relative rarity)

62-345.300 Assessment Method Overview and Guidance.

- (2) To determine the value of functions provided by impact and mitigation sites, the method incorporates the following considerations:
  - uniqueness (see paragraph 62-345.400(1)(f), F.A.C.);

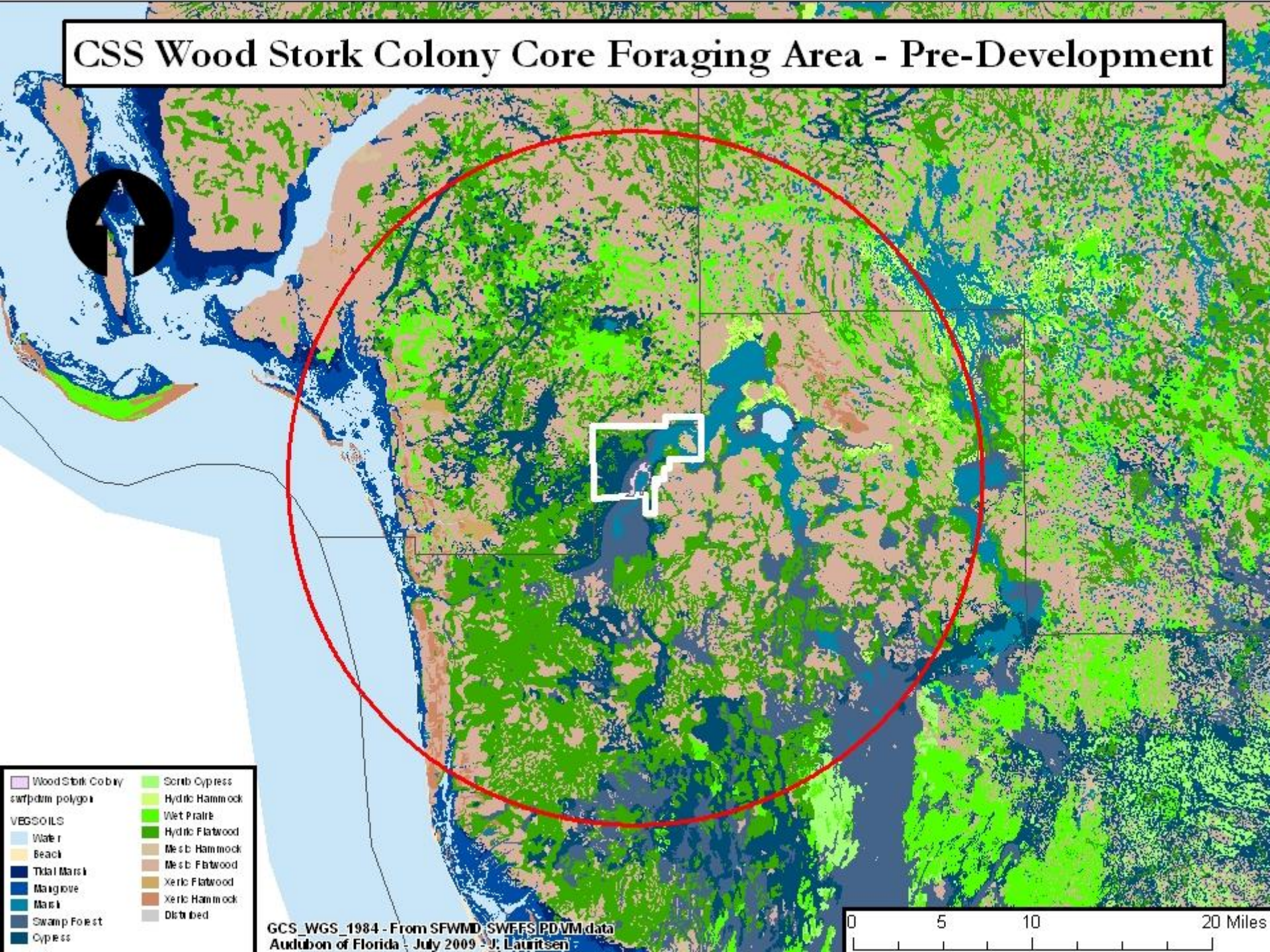
62-345.400(1)(f)

- (f) Uniqueness when considering the relative rarity of the wetland or other surface water and floral and faunal components, including listed species, on the assessment area in relation to the surrounding regional landscape;

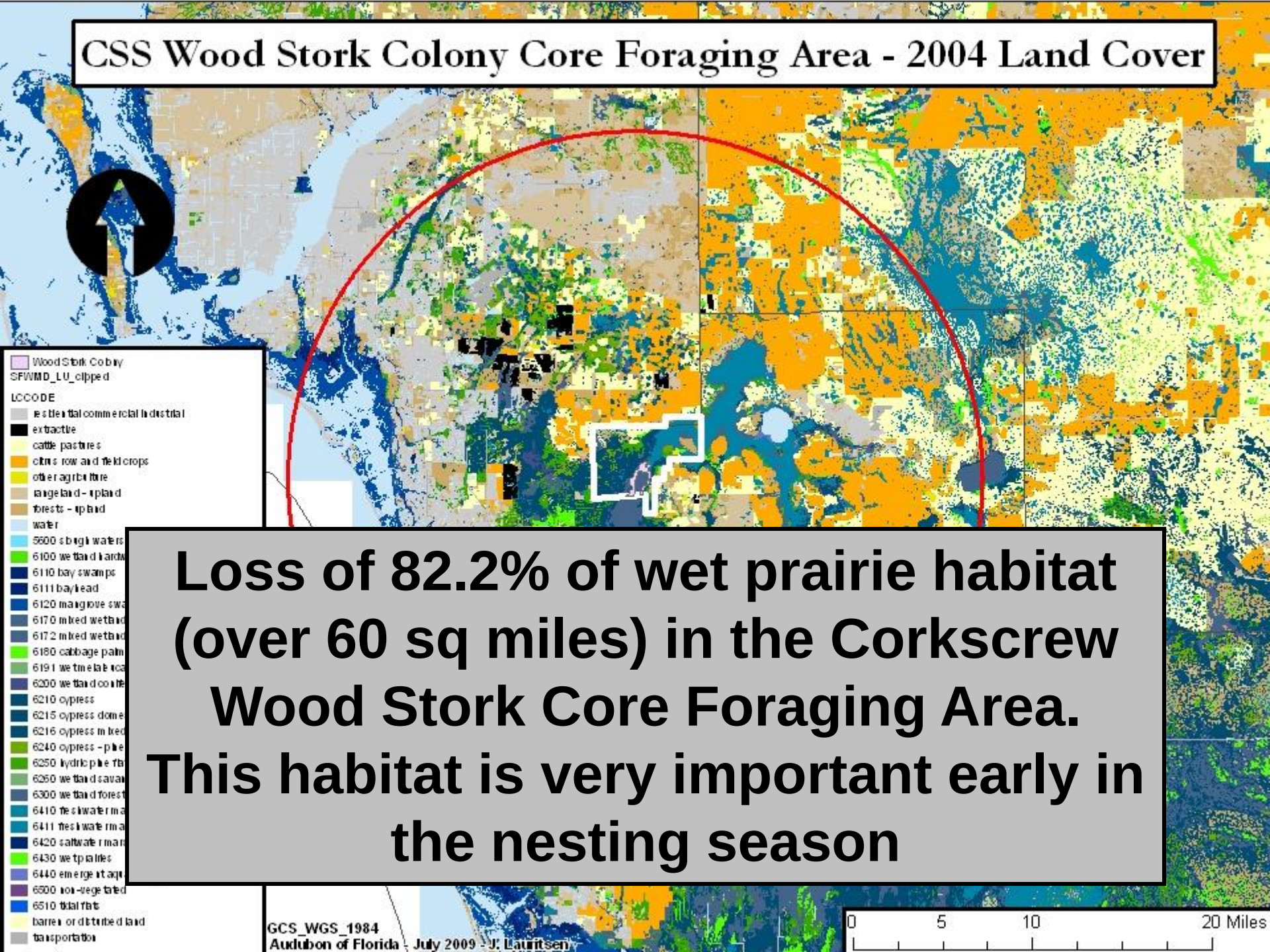
- Value of functions for wildlife depends heavily on availability of alternative habitat

- Scarcity increases the value of the remaining functions

CSS Wood Stork Colony Core Foraging Area - Pre-Development



CSS Wood Stork Colony Core Foraging Area - 2004 Land Cover



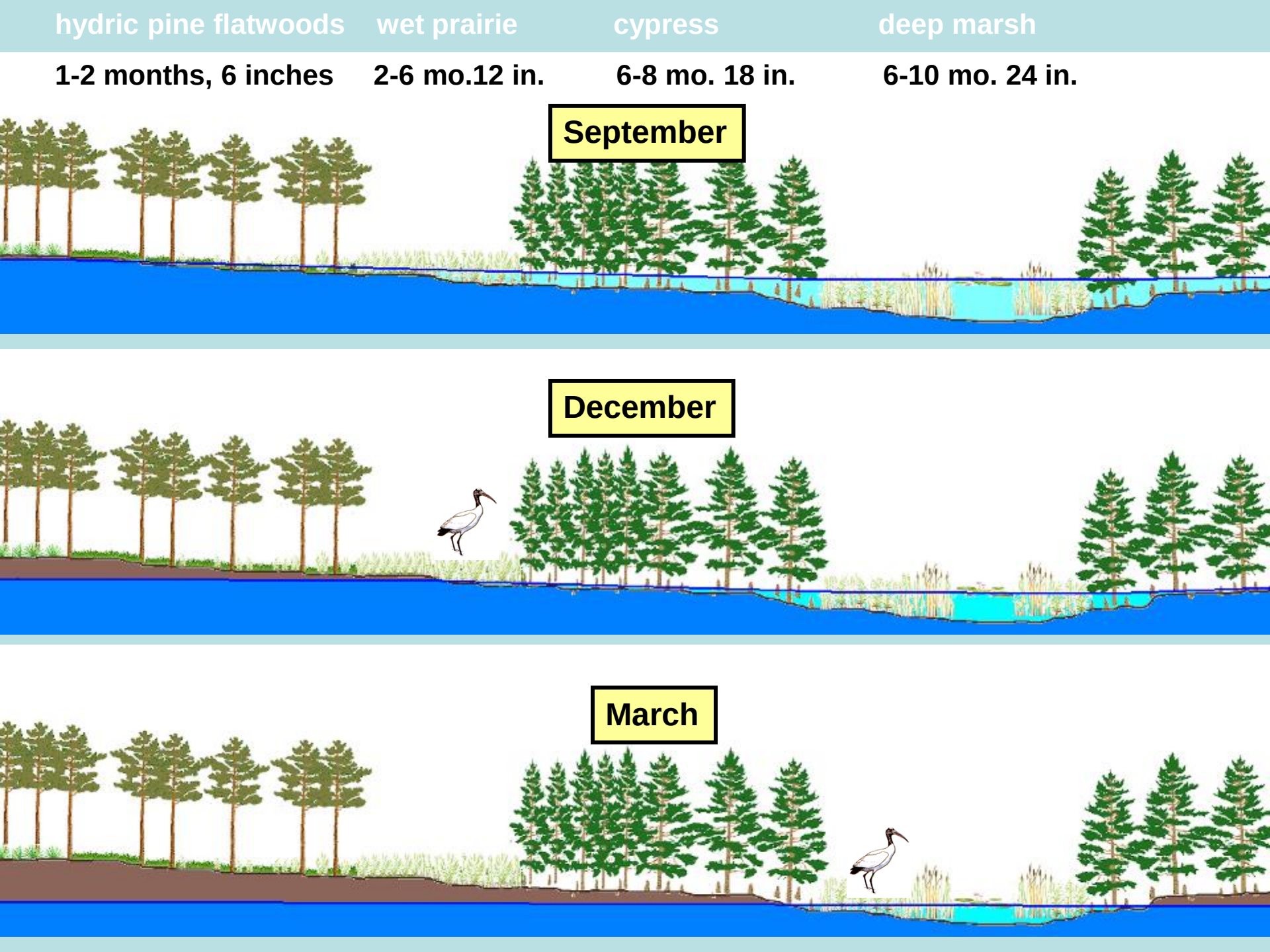
Loss of 82.2% of wet prairie habitat (over 60 sq miles) in the Corkscrew Wood Stork Core Foraging Area. This habitat is very important early in the nesting season

Hydroperiod, hydropattern functional groups

Functions provided by shallow, short-hydroperiod wetlands should be recognized as distinct from functions provided by deep long hydroperiod wetlands

Short Hydroperiod

Long Hydroperiod


hydric pine flatwoods
wet prairie
cypress
deep marsh
1-2 months, 6 inches
2-6 mo.12 in.
6-8 mo. 18 in.
6-10 mo. 24 in.
September
December
March

Hydroperiod, hydropattern functional groups

Fish community example – small native fishes such as flagfish, marsh killifish, & golden topminnows do not use the deep open water associated with most stormwater treatment areas. So while the water storage capacity lost as a result of wetland impacts may be accounted for in a project, most of the ecological value of that storage is lost due to the unnatural deepwater conditions which support an entirely different fish community. Reduction in diversity and abundance of these small fish affects a host of avifauna and herpetofauna which prey on them.

Plant community example - Replacing short-hydroperiod wetlands with longer ones eliminates certain distinct plant communities. Specifically, short-hydroperiod communities (as short as 60 days inundation per year) tend to have great abundances of seed-producing annual grasses and sedges (plant diversity in general) that yield important seed crops for migrating graniverous birds (sparrows, blackbirds, waterfowl, etc. [Icterids, Fringillids, Emberizids, Anatidae, etc.]) and local rodent populations. This plant diversity is not present in longer-hydroperiod wetlands, stormwater treatment areas or stormwater lakes.

Tracking functions by hydroperiod

Quantifying Impacts by Functional Group

Fluccs	Desc.	Type		Assessment Area Column 1				
				AA	Acreage	C w/o P	Value	FL/RFG
3000	Upland non-forested	direct	UPLAND				0	
		secondary					0	
		enhancement					0	
		preservation					0	
		restoration/ creation					0	
4000	Upland forests	direct	UPLAND				0	
		secondary					0	
		enhancement					0	
		preservation					0	
		restoration/ creation					0	
5000	water	direct	WATER				0	
		secondary					0	
		enhancement					0	
		preservation					0	
		restoration/ creation					0	
6000	Wetlands	direct	SHORT				0	
		secondary					0	
		enhancement					0	
		preservation					0	
		restoration/ creation					0	
		direct	LONG				0	
		secondary					0	
		enhancement					0	
		preservation					0	
		restoration/ creation					0	
6100	Wetland hardwood forests	direct					0	
6110	Bay Swamps							
6111	Bay heads							
	Mangrove	direct	TI				0	
		secondary					0	

This spreadsheet tool is available to quantify assessment areas by functional group. This allows you to readily see both "functional gain/loss" and "acreage gain/loss" among functional groups.

Category	FLUCCS codes	AA type	acreage	UMAM value	Functional Gain/loss	**Total Functional Gain/Loss per Category**	**Acreage gain/loss**
Uplands	3000 4000 7400	direct	0	0	0		
		secondary	0	0	0		
		enhancement	0	0	0		
		preservation	0	0	0		
		restoration/ creation	0	0	0	**0**	**0**
Water	5000	direct	0	0	0		
		secondary	0	0	0		
		enhancement	0	0	0		
		preservation	0	0	0		
		restoration/ creation	0	0	0	**0**	**0**
Short Hydroperiod Wetlands	6000 6100 6110 6111 6170 6172 6180 6200 6216 6240 6250 6260 6300 6400 6430 6460 6500	direct	0	0	0		
		secondary	0	0	0		
		enhancement	0	0	0		
		preservation	0	0	0		
		restoration/ creation	0	0	0	**0**	**0**
Long Hydroperiod Wetlands	6000 6100 6170 6200 6210 6215 6216 6300 6400 6410 6411 6440 6500	direct	0	0	0		
		secondary	0	0	0		
		enhancement	0	0	0		
		preservation	0	0	0		
		restoration/ creation	0	0	0	**0**	**0**
Undefined Hydroperiod Wetlands	6000 6100 6170 6200 6216 6300 6400 6500	direct	0	0	0		
		secondary	0	0	0		
		enhancement	0	0	0		
		preservation	0	0	0		
		restoration/ creation	0	0	0	**0**	**0**
Tidal	6120 6420 6510	direct	0	0	0		
		secondary	0	0	0		
		enhancement	0	0	0		
		preservation	0	0	0		
		restoration/ creation	0	0	0	**0**	**0**

Tracking changes in natural water storage

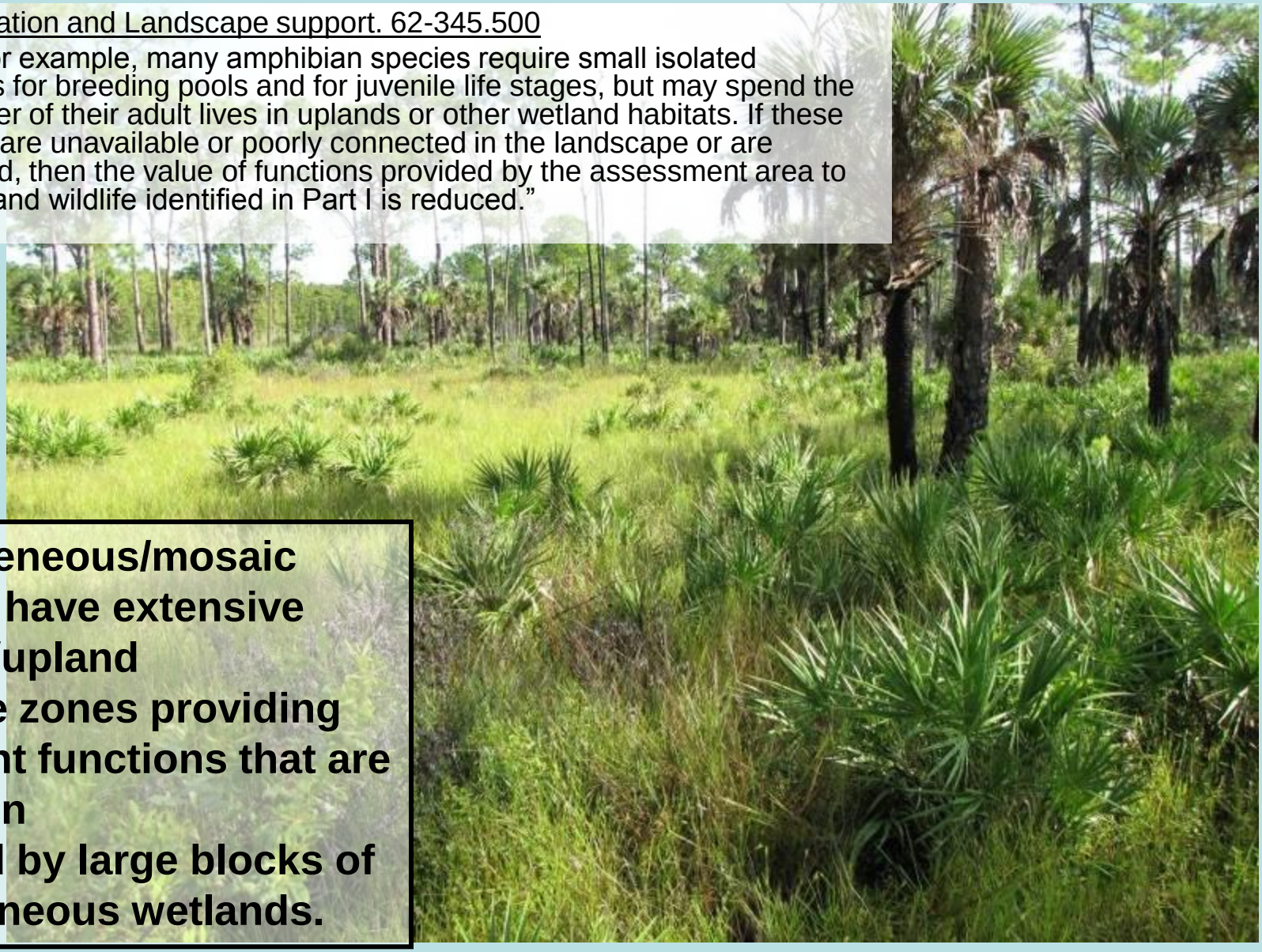
Hydropattern Category	FLUCCS category equivalent	Acreage Directly Impacted	Acreage Restored and/or Created	category gain(+) or loss (-)	storage volume acre-feet
2 - 6"	6240	0	0		
	6250	0	0		
	6260	0	0		
	6460	0	0	0	0
6 - 12"	6110	0	0		
	6111	0	0		
	6180	0	0		
	6430	0	0	0	0
12 - 24"	6210	0	0		
	6215	0	0		
	6410	0	0		
	6411	0	0	0	0
≥24"	5000	0	0		
	6440	0	0	0	0
Tidal	6120	0	0		
	6420	0	0		
	6510	0	0	0	
Undefined	6170	0	0	0	
	6200	0	0	0	
	6300	0	0	0	
	6500	0	0	0	
	6172	0	0	0	
	6000	0	0	0	
	6100	0	0	0	
	6216	0	0	0	
	6400	0	0	0	

- Each depth category provides ecological functions to specific wetland dependent communities at different times of the year.
- This spreadsheet is available to assist in tracking project induced changes in natural water storage. Using this tool will assist in quantifying the functional loss/gain in various hydropattern groups.

Wetland interface with uplands

Scoring: Location and Landscape support. 62-345.500

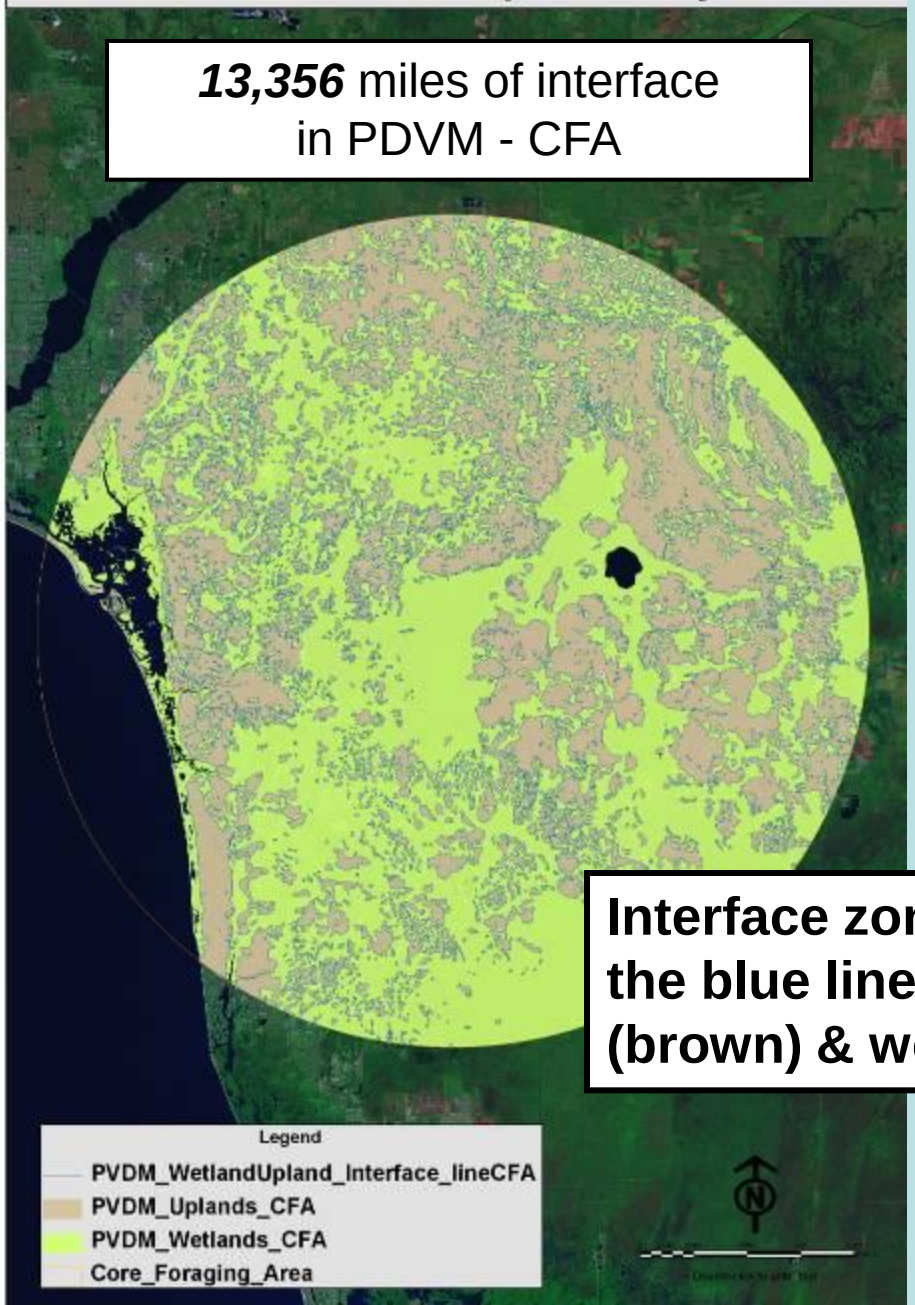
- 6(a) "For example, many amphibian species require small isolated wetlands for breeding pools and for juvenile life stages, but may spend the remainder of their adult lives in uplands or other wetland habitats. If these habitats are unavailable or poorly connected in the landscape or are degraded, then the value of functions provided by the assessment area to the fish and wildlife identified in Part I is reduced."



Heterogeneous/mosaic habitats have extensive wetland/upland interface zones providing important functions that are lost when replaced by large blocks of homogeneous wetlands.

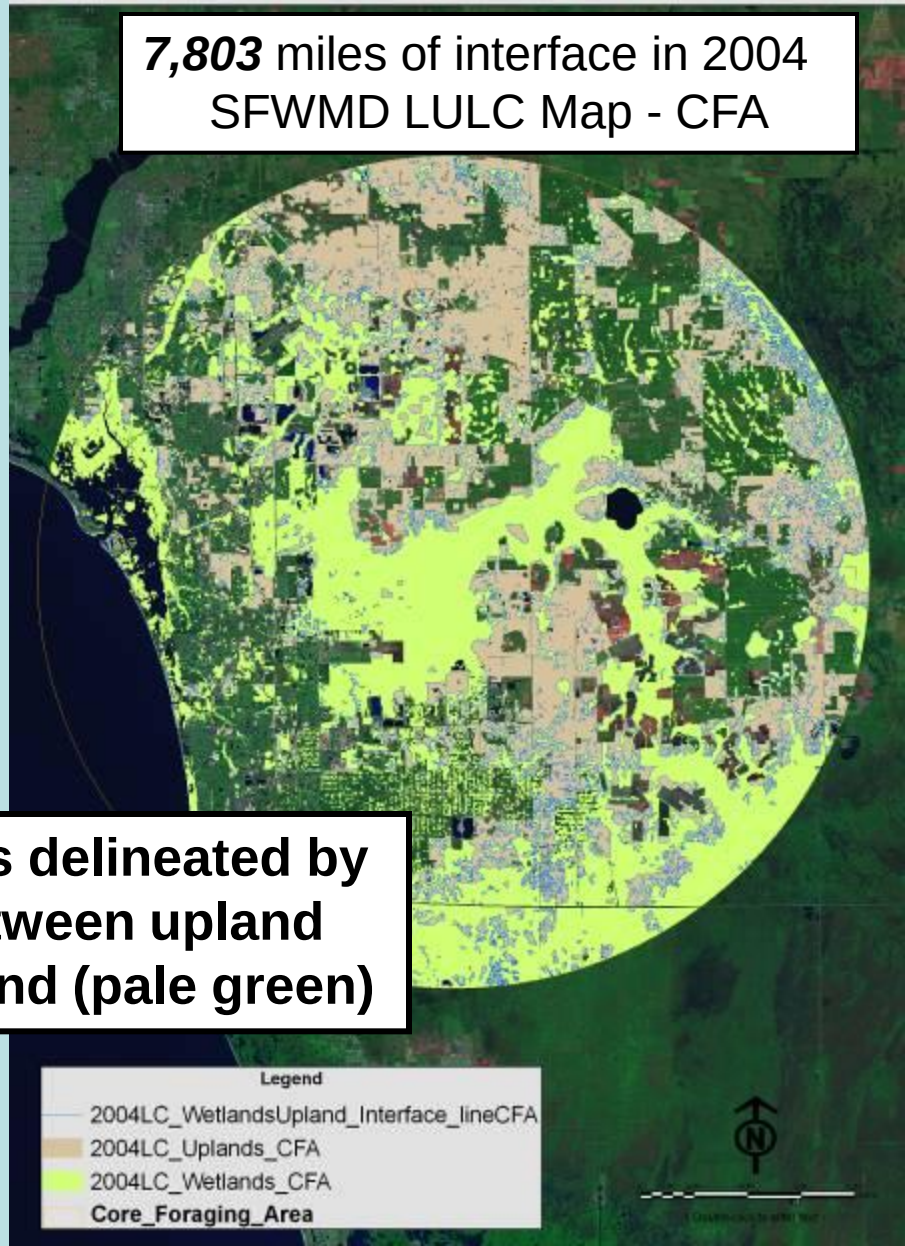
Pre-development Wetland-Upland Interface for Wood Stork Core Foraging Area at Corkscrew Swamp Sanctuary

13,356 miles of interface in PDVM - CFA



Wetland-Upland Interface for Wood Stork Core Foraging Area at Corkscrew Swamp Sanctuary from SFWMD 2004 Land Cover Map

7,803 miles of interface in 2004 SFWMD LULC Map - CFA



Interface zone is delineated by the blue line between upland (brown) & wetland (pale green)

Providing a better toolbox for agency staff

- Audubon's tracking sheets…
- Used existing mechanisms within UMAM rule to improve the ability to score and track functional impacts and lift.
- Scarcity – applies mechanism to quantify value of scarce habitats to dependent wildlife
- Expand functional groups beyond "forested and herbaceous" – to include…
  - Hydroperiod (short vs. long)
  - Hydropattern (shallow vs. deep)
  - Interface with uplands (linear feet, using GIS)